

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A device comprising:

a substrate having a plurality of trenches formed therein;

an isolation oxide disposed within each of the plurality of trenches and comprising

cavities formed therein along the junction between the substrate and the

isolation oxide;

a conductive material disposed in each of the cavities; and

a plurality of doped regions in the substrate arranged directly adjacent to the

polysilicon material.
2. (Original) The device, as set forth in claim 1, wherein each of the plurality of cavities
comprises a depth in the range of approximately 300 angstroms to 1500 angstroms.
3. (Original) The device, as set forth in claim 1, wherein each of the plurality of cavities
comprises an aspect ratio of less than or equal to approximately 0.5 to 10.
4. (Original) The device, as set forth in claim 1, wherein each of the plurality of cavities
comprises an aspect ratio of less than or equal to approximately 1 to 3.

5. (Original) The device, as set forth in claim 1, comprising a wordline stack disposed directly over the plurality of doped regions in the substrate.

6. (Original) The device, as set forth in claim 5, wherein the wordline stack comprises a polysilicon layer disposed over a field oxide layer.

7. (Original) The device, as set forth in claim 5, wherein the conductive material is disposed such that a portion of the conductive material is directly adjacent to a portion of the wordline stack.

8. (Original) The device, as set forth in claim 1, wherein the conductive material comprises polysilicon.

9. (Original) The device, as set forth in claim 1, wherein the conductive material comprises a metal.

10. (Original) The device, as set forth in claim 1, wherein the conductive material comprises a first layer comprising polysilicon and a second layer comprising metal.

11. (Original) The device, as set forth in claim 1, wherein the isolation oxide comprises:

a first cavity having a first type of conductive material disposed therein; and

a second cavity having a second type of conductive material disposed therein,
wherein the second type is different than the first type.

12. (Original) A transistor comprising:

a drain terminal comprising a doped polysilicon material disposed within a first
shallow cavity formed in an isolation oxide region;
a source terminal comprising a polysilicon material disposed within a second
shallow cavity formed in the isolation oxide region;
a channel formed in a silicon material and arranged between each of the first
shallow cavity and the second shallow cavity, wherein the channel
comprises a respective doped region coupled to each of the drain terminal
and the source terminal; and
a gate disposed over the channel and comprising one or more conductive layers
disposed over a gate oxide layer.

13. (Original) The transistor, as set forth in claim 12, wherein each of the plurality of cavities
comprises a depth in the range of approximately 300 angstroms to 1500 angstroms.

14. (Original) The transistor, as set forth in claim 12, wherein each of the plurality of cavities
comprises an aspect ratio of less than or equal to approximately 0.5 to 10.

15. (Original) The transistor, as set forth in claim 12, wherein each of the plurality of cavities
comprises an aspect ratio of less than or equal to approximately 1 to 3.

16. (Original) The transistor, as set forth in claim 12, comprising:

a first conductive post coupled to the drain terminal and extending vertically therefrom; and

a second conductive post coupled to the source terminal and extending vertically therefrom;

wherein each of the first and second conductive posts are coupled to the respective drain and source terminals at a distance from the gate that is greater than 50% of the width of the respective drain and source terminals.

17. (Original) A memory device comprising:

a storage device; and

a transistor coupled to the storage device, wherein the transistor comprises:

a drain terminal comprising a doped polysilicon material disposed within a first shallow cavity formed in an isolation oxide region;

a source terminal comprising a polysilicon material disposed within a second shallow cavity formed in the isolation oxide region;

a channel formed in a silicon material and arranged between each of the first shallow cavity and the second shallow cavity, wherein the channel comprises a respective doped region coupled to each of the drain terminal and the source terminal; and

a gate disposed over the channel and comprising one or more conductive layers disposed over a gate oxide layer.

18. (Original) The memory device, as set forth in claim 17, wherein the storage device comprises a capacitor.

19. (Original) The memory device, as set forth in claim 17, wherein each of the plurality of cavities comprises a depth in the range of approximately 300 angstroms to 1500 angstroms.

20. (Original) The memory device, as set forth in claim 17, wherein each of the plurality of cavities comprises an aspect ratio of less than or equal to approximately 0.5 to 10.

21. (Original) The memory device, as set forth in claim 17, wherein each of the plurality of cavities comprises an aspect ratio of less than or equal to approximately 1 to 3.

22. (Original) A system comprising:

a processor; and

a memory device coupled to the processor and comprising:

a storage device; and

a transistor coupled to the storage device, wherein the transistor comprises:

a drain terminal comprising a doped polysilicon material disposed

within a first shallow cavity formed in an isolation oxide

region;

a source terminal comprising a polysilicon material disposed within

a second shallow cavity formed in the isolation oxide region;

a channel formed in a silicon material and arranged between each of
the first shallow cavity and the second shallow cavity,
wherein the channel comprises a respective doped region
coupled to each of the drain terminal and the source terminal;
and
a gate disposed over the channel and comprising one or more
conductive layers disposed over a gate oxide layer.

23. (Original) The system, as set forth in claim 22, wherein each of the plurality of cavities comprises a depth in the range of approximately 300 angstroms to 1500 angstroms.

24. (Original) The system, as set forth in claim 22, wherein each of the plurality of cavities comprises an aspect ratio of less than or equal to approximately 0.5 to 10.

25. (Original) The device, as set forth in claim 22, wherein each of the plurality of cavities comprises an aspect ratio of less than or equal to approximately 1 to 3.

26-32. (Cancelled)